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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/972,167	10/05/2001	Blake Wilson	A61-25651-US	3726
128	7590	07/01/2005	EXAMINER	
HONEYWELL INTERNATIONAL INC. 101 COLUMBIA ROAD P O BOX 2245 MORRISTOWN, NJ 07962-2245			MACKOWEY, ANTHONY M	
			ART UNIT	PAPER NUMBER
			2623	

DATE MAILED: 07/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/972,167

Applicant(s)

WILSON, BLAKE

Examiner

Anthony Mackowey

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7,9-19,21-25 and 27-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7,9-19,21-25 and 27-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 2/24/05 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

The amendment filed February 24, 2005 has been entered and made of record.

Applicant's arguments, see page 9, lines 8-12, filed February 24, 2005, with respect to the objection to Figure 4 have been fully considered and are persuasive. The objection to Figure 4 has been withdrawn.

Applicant's arguments, see page 9, lines 13-18, filed February 24, 2005, with respect to the rejection of claims 8 and 20-27, under 35 U.S.C. 112, second paragraph have been fully considered and are persuasive. The rejection of claims 8 and 20-27 under 35 U.S.C. 112, second paragraph has been withdrawn.

Applicant's arguments, see page 9, line 19 thru page 12, filed February 24, 2005, with respect to the rejection(s) of claim(s) 1-3, 6-9, 11-13, and under 35 U.S.C. 103 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of WO 99/56082 to Agnew (previously cited on applicant's IDS).

In response to applicant's argument that Hendrickson is nonanalogous art, it has been held that a prior art reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In this case, the reference was cited for teaching subroutines for computing geographic distances and geographic direction between points of

Art Unit: 2623

known latitude and longitude, while the reference performs these calculations in preflight and in-flight navigation planning, these mathematical calculations could be applied to any environment in which such calculations would be pertinent, and are not limited to preflight and in-flight navigation planning.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 6, 7, 9, 11-13 and 16-19, 21-25 and 27-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent 5,414,462 to Veatch in view of U.S. Patent 4,220,994 to Hendrickson and WO 99/56082 to Agnew.

As to claim 1, Veatch discloses a method for geographically referencing an improvement image comprising the steps of:

extracting image positions of at least two image reference points, the reference points depicting features that each have a known geographic position (col. 4, lines 32-56) and interpreting geographic positions for the features (col. 4, lines 37-40).

Veatch does not disclose computing a geographic distance between the features or determining a geographic direction between the features. However, Hendrickson discloses a device performing the steps of computing a geographic distance between features (points of

Art Unit: 2623

known latitude and longitude) and determining a geographic direction between features (col. 7, lines 32-45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method disclosed by Veatch to include the steps computing a geographic distance between features and determining geographic direction between the features as taught by Hendrickson. The motivation for combining their teachings is derived from the fact that the results of these steps are useful in calculations and actions performed in later steps (i.e. scaling, translating, and rotating), which are disclosed by Veatch.

Also, Veatch does not disclose the steps of computing an image distance between features, and determining an improvement image scale factor based on the computed geographic distance between the features and the computed image distance between features. Veatch discloses scaling of the image (col. 5, lines 15-17) but is silent with regard to obtaining the scale factor. However, Agnew discloses a calculation for determining a scale factor based on computed geographic distance (U and V represent geographic coordinates) and computed digitizer distance (x and y represent digitizer coordinates) between features (points) (page 9, lines 1-12, The equation for S_m clearly shows a scale factor based on the geographic and digitizer distances being calculated and multiplied times s_d).

While the calculation taught by Agnew is performed between a map and a digitizer surface, it is obvious the same mathematical calculations can be performed on an image containing features (points) of known geographic location at respective image coordinates.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method disclosed by Veatch to include the steps of computing an image

Art Unit: 2623

distance between the features and determining an improvement image scale factor based on the computed geographic distance between features and the computed image distance between features using the mathematical calculation taught by Agnew. One of ordinary skill in the art would have been motivated to combine these teachings because Veatch performs the scaling of the image, implying a scale factor and it would allow appropriate scaling to a particular or desired amount.

As to claim 2, Veatch further discloses the step of displaying said improvement image (col. 3, lines 65-68; col. 4, lines 61-65; Fig. 6).

As to claim 3, Veatch further discloses the step of marking at least two reference points on the improvement image with information indicating geographic position (Fig. 6, geographic positions marked along lot boundaries).

As to claim 6, Veatch does not disclose the step of determining an improvement image reference translation. Veatch discloses translating the image (col. 5, lines 15-17) but is silent with regard to determining the improvement image reference translation. However, Agnew does disclose the step of determining the coordinate translations (page 9 thru page 10, line 3, Agnew teaches mapping the geographic coordinate pairs to the digitizer coordinate pairs, such a calculation performed on an image would determine the reference translation.).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method disclosed by Veatch to include the step of determining the improvement image reference translation. One of ordinary skill in the art would have been motivated to combine these teachings because the reference translation would provide

Art Unit: 2623

appropriate translation of the image. Appropriate translation ensures the highest correlation when the improvement image is combined with other images or information.

As to claim 7, Veatch, Hendrickson and Agnew disclose all the limitations of claim 1. Veatch does not disclose the step of determining an improvement image rotation angle. Veatch discloses rotating the image (col. 5, line 15-17) but is silent with regard to determining the rotation angle. However, Agnew does disclose the step of determining a rotation angle (page 9, line 8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method disclosed by Veatch to include the step of determining an improvement image rotation angle as disclosed by Agnew. One would have been motivated to combine their teachings because it would be advantageous to know by what amount an image is to be rotated during rotation. Appropriate rotation ensures the highest correlation when the image is combined with other images and information.

As to claim 9, Veatch further discloses the step of expressing the geographic positions in latitude and longitude (col. 5, lines 5-12)

With regard to claim 11, arguments analogous to those presented above for claim 1 are applicable to claim 11.

As to claim 12, Veatch further discloses the step of displaying said geographically referenced image (col. 3, lines 65-68; col. 5, lines 12-15). Veatch does not specifically state that the image is displayed, however, Veatch discloses that the GIS system in which all steps are performed contains a display unit. It would have been obvious to one of ordinary skill in the art at the time the invention was made to display the geographically referenced image on the display

Art Unit: 2623

unit disclosed by Veatch. A motivation for displaying the image would be to visually verify that all calculations and information consistent with the geographically referenced image are correct.

As to claim 13, Veatch further discloses the step of marking at least two reference points on the improvement image with information indicating geographic position (Fig. 6, geographic positions marked along lot boundaries).

With regard to claims 16 and 17, arguments analogous to those presented above for claim 6 are applicable to claims 16 and 17.

With regard to claims 18 and 19, arguments analogous to those presented above for claim 7 are applicable to claims 18 and 19:

With regard to claim 21, arguments analogous to those presented above for claim 1 concerning improvement image scale factor are applicable to claim 21.

As to claim 22, Veatch discloses a method for combining an improvement image with geographically referenced information to produce a composite image (col. 1, lines 50-65), the method comprising the steps of:

extracting an image position for each of at least two image reference points, the reference points depicting features that each have a known geographic position (col. 4, lines 32-56),

interpreting a geographic position for each of the features (col. 4, lines 37-40), and

creating an output (col. 5, lines 20-23).

Veatch does not disclose computing a geographic distance between the features or determining a geographic direction between the features. Please refer to the discussion of claim 1 for arguments concerning the steps of computing a geographic distance between features and determining a geographic direction between features.

Also, Veatch does not disclose the steps of determining an improvement image scale factor based on the computed geographic distance between the features and the computed image distance between the features and scaling the image based on the determined improvement image scale factor. Please refer to the discussions of claim 1 for arguments concerning the step of obtaining a scale factor and scaling of the image.

Veatch does not disclose the step of determining an improvement image reference translation. Please refer to the discussion of claim 6 for arguments concerning the step of determining the improvement image reference translation.

Veatch does not disclose the step of determining an improvement image rotation angle. Refer to the discussion of claim 7 for arguments concerning the step of determining an improvement image rotation angle.

As to claim 23, Veatch further discloses the step of displaying said composite image (col. 5, lines 22-23).

As to claims 24-25, an output containing the improvement image reference translation and rotation angle is inherent to the production and display of the composite image as taught in the combined teachings. In order to effectively correlate the improvement image with the other geographically referenced information the processor must properly translate and rotate the improvement image before combination. In order to perform these manipulations the processor would need the respective values obtained from the reference translation and rotation angle determining steps previously conducted by the processor, thus an output of the processor containing these values is implied as it would have been needed for manipulation of the improvement image. The displayed composite image contains the translated and rotated

Art Unit: 2623

improvement image combined with other geographical referenced information, also implying that it has been created from an output of the processor which contained the improvement image reference translation and rotation angle.

As to claim 27, Veatch further discloses the step of creating a composite image based on said output (col. 5, lines 20-23). Veatch discloses printing a hard copy of the composite image. Veatch does not specifically state that the composite image is based on an output, however, it is obvious that the input the printer requires to create this hard copy is an output of the GIS system (col. 3, lines 59-68 and col. 4, lines 1-12).

As to claim 28, Veatch discloses a system for geographically referencing an improvement image, the system comprising a memory storage device in communication with a processor (col. 3, lines 59-68 and col. 4, lines 1-12), the memory storage device configured to store an improvement image (col. 4, lines 65-66). With regard to the remainder of this claim, arguments analogous to those presented above for claim 1 are applicable to claim 28.

With regard claim 29, arguments analogous to those presented above for claim 28 are applicable to claim 29.

As to claim 30, Veatch discloses a system for combining an improvement image with geographically referenced information, the system comprising a memory storage device in communication with a processor (col. 3, lines 59-68 and col. 4, lines 1-12), the memory storage device configured to store the improvement image (col. 4, lines 65-66) and the geographically referenced information (col. 4, lines 32-45). With regard to the remainder of this claim, arguments analogous to those presented above for claim 22 are applicable to claim 30.

Claims 4,5,14, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Veatch, Hendrickson, and Agnew as applied to claims 1 and 11 above, and further in view of U.S Patent 3,748,644 to Tisdale.

As to claims 4 and 14, Veatch, Hendrickson and Agnew disclose all the limitations of claims 1 and 11 but do not disclose the step of determining an image position for each of the reference points. However, Tisdale discloses assigning coordinates to chosen image points in the registration of points in two separate images (col. 2, lines 67-68).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method disclosed by Veatch to include the step of determining an image position for each of the reference points as taught by Tisdale. Motivation for combining their teachings is derived from the fact that the result of this step would be useful in calculations and actions performed in later steps (i.e. scaling, translating, and rotating), which are disclosed by Veatch.

As to claims 5 and 15, Veatch, Hendrickson, and Agnew disclose all the limitations of claims 1 and 11 but do not disclose the step of determining an image direction between the reference points. However, Tisdale discloses determining the orientation of an imaginary line between image points in the registration of points in two separate images (col. 3, lines 1-2, 55-60).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method disclosed by Veatch to include the step of determining an image direction between the reference points as taught by Tisdale. Motivation for combining their

Art Unit: 2623

teachings is derived from the fact that the result of this step would be useful in calculations and actions performed in later steps, which are disclosed by Veatch.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Veatch, Hendrickson and Agnew as applied to claim 1 above, and further in view of U.S. Patent 4,491,724 to Murray. Veatch, Hendrickson and Agnew do not disclose the step of expressing the geographic distance in nautical miles. However, Murray does disclose using the nautical mile scale to express distance in the disclosed course and heading computer.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods disclosed by Veatch, Hendrickson and Agnew to include the step of expressing the geographic distance in nautical miles. One of ordinary skill in the art would have been motivated to do this because it would allow incorporation of this method into the navigation system of an airplane or boat where use of nautical miles is common and the curvature of the earth must be accounted for in order to accurately navigate.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after

Art Unit: 2623

the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

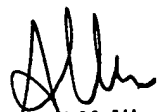
Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Mackowey whose telephone number is (571) 272-7425. The examiner can normally be reached on M-F 9:00-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (571) 272-7414. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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6/20/2005


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